

ABSTRACT

5 A semiconductor device with high withstand voltage, reduced forward-direction voltage degradation, long lifetime and high reliability, is provided. A junction between the drift layer and anode layer of a bipolar semiconductor device and an electric field relaxation layer are formed at a distance from each other, and an edge portion of the anode is opposed to the semiconductor region between the junction and the electric field relaxation layer, with an insulating film intervening. When reverse-biased, due to the electric field effect imparted to the drift layer between the junction and the electric field relaxation layer from the electrode, with the insulating film intervening, the junction and electric field relaxation layer are electrically connected, and electric field concentration at the junction edge portion is relaxed. When forward-biased, the junction and electric field relaxation layer are electrically isolated, and forward-direction current flows only through the junction.

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